

**Amendments to the Drawings:**

The attached fifteen (15) replacement drawing sheets include FIGS. 1 through 15. The replacement sheets replace the original sheets which were informal and included FIGS. 1 through 15. The replacement sheets are in compliance with 37 C.F.R. § 1.121(d).

FIGS. 6, 7, and 8 of the replacement sheets differ from FIGS. 6, 7, and 8 of the original sheets by including the label "Prior Art".

FIG. 7 of the replacement sheets differs from FIG. 7 of the original sheet in that reference number –110– replaces reference number "12". Support for this amendment is found on FIGS. 6 and 8 and the related description in the specification.

The FIGS. of the replacement sheets include the English translation of the Japanese text set forth in the FIGS. of the original sheets.

Attachment: Replacement Sheets 1/15 through 15/15

### **Remarks**

The Applicant respectfully requests reconsideration and reexamination of the above-identified patent application, as amended. Claims 1, 4, 6, 8, 10, and 13-18 are pending in this application upon entry of this Amendment.

### **The Claim Amendments**

In this Amendment, the Applicant has amended claims 1, 4, 6, 8, 10, and 13-17; cancelled claims 2-3, 5, 7, 9, and 11-12; and added new claim 18. Of the pending claims, claim 1 is an independent claim.

Regarding amended independent claim 1, the specification describes that the sculling oar comprises “a scull arm operated by an operator”, “a scull blade having a flat part extending substantially perpendicular to a water surface when the sculling oar is attached to a boat”. The specification also describes that a moment about an axis (an axis of rotation) of the scull blade is generated; that the scull arm and the scull blade are joined; and that the scull arm has an upper angle with respect to the scull blade. As seen in Fig. 1 it is apparent that the power point of the scull arm is positioned above the extension line (the axis of rotation) of the scull blade. Therefore, amended independent claim 1 is within the scope of the disclosure of the specification and the drawings.

### **The Drawings**

In the Office Action mailed May 30, 2006, the Examiner objected to the drawings for being informal. The Examiner indicated that new corrected drawings in compliance with 37 C.F.R. § 1.121(d) are required and that FIGS. 6-8 should be labeled as “Prior Art”. As indicated above, the Applicant has submitted new corrected drawing sheets which address this objection. Accordingly, the Applicant requests withdraw of the objection to the drawings.

**Claim Rejections - 35 U.S.C. § 112**

The Examiner rejected claims 6 and 12-16 under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph, as being indefinite. The Examiner indicated there is no proper antecedent for the term “the oblique angle” in claim 6, line 2 and the term “the angle” in claim 12, line 2. The Examiner indicated that claims 13-14 are indefinite as the structures recited by these claims are not clear. With respect to claim 13, the Examiner suggested that the English equivalent of the term “hayao” be used.

The Applicant has amended claim 6 to remove the term “the oblique angle”. The Applicant has cancelled claim 12. The Applicant has amended claims 13-14 to more clearly recite the structure therein. The Applicant has further amended claim 13 to use the English equivalent –rope– for the term “hayao”. Claims 15-16 properly depend from claim 14. Accordingly, the Applicant respectfully requests withdraw of the rejection to the claims under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph.

**Claim Rejections - 35 U.S.C. 102**

The Examiner rejected claims 1-2, 4, 7, 9-10, and 17 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,086,492 issued to Holley (“Holley”). The Applicant believes that the claims presented herein are patentable over Holley.

In Holley, fin 12 moves right to left with the movement of grip 13 from right to left thereby providing a slight thrust. As a result, the boat moves. However, fin 12 is attached to the boat by a screw 27 such that it is congruent with part 16. Consequently, fin 12 does not rotate alone and the thrust is obtained only by fin 12. As a result, the amount of thrust is relatively small.

In contrast, in amended independent claim 1, a sculling oar is recited wherein (in the case of a first embodiment, the power point of) a scull arm and a scull blade are joined

such that the joining part is positioned above a rotation axis of the scull blade, and scull blade has a flat part extending substantially perpendicularly to the water surface. As a result, it is possible to efficiently row throughout an entire speed range using fluid mechanics properties. This point corresponds to the effect described in the specification that “the first motion of the turn-over operation generates rotation moment about an axis of the Ro-blade 2 in the water to naturally introduce the appropriate turn-over angle” (page 8, line 29 through page 9, line 2 of the specification).

This point is apparent from the specification which states that “the operator of the Ro-scutt [sculling oar] moves the Ro-arm 1 [scull arm] so that the front edge f of the flat part 12 of the Ro-blade 2 [scull blade] is faced toward the advancing direction [page 12, lines 23-24 of the specification] . . . In the operation described above, since the operator applies force F' to the Ro-arm 1 on the fulcrum O, the Ro-blade 2 is rotated in the reverse direction by the force F' on the fulcrum O [page 13, lines 4-6 of the specification]. At this point, the Ro-arm 1 overcomes the water resistance received by the Ro-blade 2, and the Ro-arm 1 starts the lateral movement [page 13, lines 7-8 of the specification]. Because the Ro-arm 1 has the upper angle relative to the Ro-blade 2 . . . the rotational movement is induced about the longitudinal direction (on the extension line of the Ro-blade 2) of the Ro-blade 2 in the water [page 13, lines 8-11 of the specification]. Then, the force with which the operator pushes laterally the Ro-arm 1 acts on the upper side of the rotation axis in the longitudinal direction, so that the distal end of the Ro-arm 1 is pressed forward [page 13, lines 12-14 of the specification]. Namely, when viewed from the Ro-blade 2, the front edge f of the Ro-blade 2 is automatically rotated in the desired direction [page 13, lines 14-16 of the specification] . . . The rotation of the Ro-blade 2 is continued until the front edge f becomes parallel to the water flow in the advancing direction with respect to the Ro-blade 2 which is freely moved, and the thrust force is generated until the front edge f becomes parallel [page 13, lines 23-26 of the specification]. When the front edge f becomes parallel, the thrust force is not generated, but, because the thrust force generated at an early stage of the rotation of the Ro-blade 2 gives tension force to the Hayao 4 [rope], the rotation is stopped in the midway, and the Ro-blade

2 is stabilized in the water at the appropriate incidence angle [page 13, lines 26-30 of the specification].”

This is due to the fact that in the claimed sculling oar, the scull arm and the scull blade are joined to form a V-shape with respect to the water surface, whereby the power point in the scull arm is positioned on the upper side of the rotation axis of the scull blade.

Consequently, in the claimed sculling oar, the operation of turning the scull arm can be performed relatively easily (if the direction is changed with only a slight force, the turning operation can be automatically performed), but on the other hand, in the case of Holley, such effect cannot be obtained and it is necessary to introduce a force sufficiently large to overcome the water resistance and perform the turning operation to change the direction. This is the same for Werding. It is apparent from the constructions disclosed in Holley and Werding that the axis of rotation itself of the scull blade is not existent. In other words, the claimed sculling oar is not the same as that of Holley, and even if Holley and Werding were combined, the construction of the claimed sculling oar cannot be conceived from such combination.

In the case of the claimed sculling oar, the sculling oar within the water rotates as a whole about the axis of rotation of the scull blade whereby the entire sculling oar generates the thrust. In other words, in the case of Holley, the thrust can be generated only by fin 12, but in the case of the claimed sculling oar, the thrust can be generated by the entire sculling oar. Therefore, a relatively extreme strong thrust can be generated when compared to Holley and Werding.

In such, such a construction in which the power point of the scull arm is positioned on the upper side of the rotation axis of the scull blade as claimed is not taught or suggested by either Holley or Werding, alone or in combination.

In view of the foregoing, the Applicant respectfully requests reconsideration and withdraw of the rejection to the claims under 35 U.S.C. § 102(b).

**Claim Rejections - 35 U.S.C. § 103**

The Examiner rejected claims 3, 5, 8, and 11 under 35 U.S.C. § 103(a) as being unpatentable over Holley in view of DE 4,227,198 issued to Werding ("Werding"). Claims 3, 5, and 11 have been cancelled. Claims 8 depends from amended independent claim 1 and includes the limitations therein. Thus, the Applicant respectfully requests withdraw of the rejection to the claims under 35 U.S.C. § 103(a).

**CONCLUSION**

In summary, claims 1, 4, 6, 8, 10, and 13-18 presented herein meet the substantive requirements for patentability. The case is in appropriate condition for allowance. Accordingly, such action is respectfully requested.

If a telephone or video conference would expedite allowance or resolve any further questions, such a conference is invited at the convenience of the Examiner.

Respectfully submitted,

**ATSUSHI DOI**

By

James N. Kallis  
Reg. No. 41,102  
Attorney for Applicant

Date: July 27, 2006

**BROOKS KUSHMAN P.C.**  
1000 Town Center, 22nd Floor  
Southfield, MI 48075-1238  
Phone: 248-358-4400  
Fax: 248-358-3351